DOCUMENT RESUME

ED 374 873 JC 940 570

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TITLE Education's New Challenge and Choice: Instructional Technology -- Old Byway or Superhighway?
INSTITUTION League for Innovation in the Community Coll.
SPONS AGENCY Kellogg Foundation, Battle Creek, Mich.
PUB DATE Oct 94
NOTE 4p.
PUB TYPE Collected Works - Serials (022)
JOURNAL CIT Leadership Abstracts; v7 n10 Oct 1994

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Change Strategies; Community Colleges; Computer Uses in Education; *Educational Technology; *Educational Trends; Higher Education; *Information Technology; Nonschool Educational Programs; Public Opinion; *Teacher Student Relationship; Teaching Methods; Two Year Colleges; Two Year College Students

ABSTRACT

Higher education is trapped in a time warp -- a pre-Gutenberg era where instructional information is mostly transmitted by word of mouth. New information technologies present a critical challenge which cannot be ignored if higher education is to succeed or even survive. Increasingly diverse college students are beginning to think and act like consumers interested in job skills that have relevance beyond the classroom. At the same time, confidence in higher education has turned to cynicism as the public decries soaring costs and declining quality. New competition will be created by communication companies with extensive electronic networks and the funds for the best educators, equipment, and data bases. The convergence of the problems of new students, public distrust, and new competitors poses a challenge to higher education which can only be met if colleges use the new information technologies to transform classrooms and teaching technologies. To succeed, faculty overcome their own fears and resistance to technology and alter the way they teach and the way students learn. Technology can help higher education link access and excellence by tailoring learning to the diverse student needs and styles, while also allowing colleges to respond to critics by containing costs and improving quality. Most of all, it can confound potential competitors by freeing up faculty to spend more time on activities most valued by students -- advising, counseling, mentoring, and collaborating. (KP)

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Leadership Abstracts
Volume 7, Number 10

U.S. DEPARTMENT OF EDUCATION
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EDUCATION'S NEW CHALLENGE AND CHOICE: INSTRUCTIONAL TECHNOLOGY—OLD BYWAY OR SUPERHIGHWAY?

Joseph C. Burke

Higher education is trapped in a time warp—a pre-Gutenberg era where instructional information is mostly transmitted by word of mouth. At the same time, the outside world is rushing down an information superhighway toward a global village where information is instantly available on a worldwide web of databases. Unfortunately, colleges and universities have a long history of surviving technological revolutions largely unscathed. Though these revolutions have transformed the culture, they have left education's curricula and classrooms largely untouched. One of Burke's Laws is that the interests of academics in change is in direct proportion to its distance from the classroom.

Consider the role communications technologies have had on society at large compared to higher education:

- The printing press made knowledge, once the monopoly of the favored few, accessible to all who could read. Books are now ubiquitous, yet lectures persist as the principal means of conveying information to students. Though faculty write the textbooks, many students do not read them because they expect the lectures to cover the material.
- The miracle of television has transformed American life but left little imprint on higher education. Television never transformed the technology of instruction, though it did change dramatically the learning styles of generations of students nurtured more by images and pictures than by written words.
- Computers have changed life on campus, but they still have not disrupted the dominance of the lecture as the predominant mode of instruction. A recent survey from the UCLA Higher Education Institute shows that public research universities indicate that only 12.1 percent of their undergraduate courses include some form of computer or machine-aided instruction. The national average for four-year public colleges was 15.7 percent, while the average for two-year colleges was 24.0 percent.

H. G. Wells once warned that the world faced a catastrophe and that the only hope was to win "the race between education and obsolescence." But catastrophe is certain if education becomes obsolete, clinging to a talking technology that its own researchers describe as ineffective and inefficient.

Instructional Technology as a Challenge

The new information technologies present a critical challenge to colleges and universities. This time, for several reasons, higher education may not succeed or even survive if it ignores them.

New Students. Higher education in the United States, once the preserve of the favored few, now educates over 60 percent of all high school graduates. These students are more diverse in gender, culture, and ethnicity. They are older and often attend classes only part time because they work, many full time. The usual classes, where learning depends on attending lectures, do not fit their diverse learning styles or, too often, even their increasingly busy schedules.

As these so-called nontraditional students become the majority of those attending public colleges and universities, they begin to think and act like consumers. They choose a college as they do any product—by looking at price, quality, and convenience. Most of all, students are interested in job skills and want what they learn to have relevance beyond the classroom. They recognize that the real world of the future will depend on technology and demand to be taught the skills and knowledge to use it well.

These new attitudes are jarring to higher education. Colleges and universities are used to being the sole purveyors of knowledge; those who wanted that knowledge always have come to them. But the new technologies, along with the new demographics, are turning the tables.

Public Distrust. Society and the state, along with the students, have become disenchanted with higher education. The public decries the soaring costs and declining quality of undergraduate education. The continuing calls for higher state support and student tuition in spite of deplorable completion rates and declining skills displayed by graduates have led to rising complaints. Higher education is accused of reneging on the promise to deliver both access and quality.

In the past, higher education could always count on the support of the public when it confronted challenges.

Published by the League for Innovation in the Community College
Initial support from the W.K. Kellogg Foundation

Today's polls show that public confidence in higher education has turned to cynicism, resulting primarily from the recognition that graduates lack the writing and mathematical skills for today's jobs. That cynicism will increase when the public realizes that education is not teaching its graduates how to navigate the web of databases essential to their success in a society ever more dependent on access to information.

New Competition. A serious competitive challenge to the monopoly in granting degrees is posed by the educational potential of the electronic superhighway. A recent report sponsored by the Pew Charitable Trusts sees this revolution in access to information as "the most powerful external challenge facing higher education, and the one the academy is least prepared to understand." The report contends that faculty resistance to including the new technologies in their teaching, coupled with the consumerism of many students, may well produce powerful new competitors for higher education.

The information highway is not developing unnoticed by the corporate giants in the communication, information, and technology fields. The new competition in education will not be fly-by-night trade schools interested only in collecting student aid, but mergers of the great communication companies with extensive electronic networks and the funds to hire the best educators, to buy the best equipment, and to acquire the best databases. Such alliances, unshackled by tradition and bringing great expertise and resources to the task, could well offer high-quality education at a much lower cost than traditional colleges and universities. The threat of powerful competition in the higher education market is real.

Instructional Technology as a Solution

The convergence of these three problems—new students, public distrust, and new competitors—poses a real challenge to higher education. It is time to get scared—and to take action. The solution to the challenge is to use the new information technologies to transform classrooms and teaching technologies.

To succeed, faculty cannot merely introduce incrementally more technology into their teaching, but must transform the way they teach and the way students learn by using the new information technologies. For that to happen, colleges must overcome the major faculty criticisms of instructional technology.

The favorite criticism from faculty is that the use of technology will dehumanize teaching and learning. Ironically, the reverse is true; more high tech may allow faculty to have more high touch. Technology, if properly used, can make education more personal to students, because it can be tailored to the individual needs and learning style of each person.

A second criticism from faculty is that technology will reduce their role in teaching. Again, the reverse is true; technology can elevate rather than diminish the importance of faculty. It can free faculty from the drudgery of purveying information and data and allow them to convey the meanings and relationships that constitute knowledge and wisdom. Faculty can have the time to mentor students, to deal with their differences, and to help them become fellow learners. Faculty will be free at last to reach for the heights to which higher education has long aspired.

Finally, faculty fear that the transformation of teaching and learning through information technology will be used to diminish their numbers and their compensation because of reduced importance of the traditional lecture. Once more, the opposite is true. The current system of measuring their contribution to instruction by counting their contact hours trivializes their teaching and demeans their profession. It makes teaching look easy and undemanding, and measures faculty teaching like unskilled labor by a time clock.

The current system is grossly unfair, for it gives faculty no credit for contributions to student learning such as advising, counseling, mentoring, and collaborating. Yet these activities are the most valued by students, and will become even more important to them when they can get information easier and quicker from home rather than on campus. It is precisely these higher-order faculty contributions that increasingly provide the value added that give colleges and universities a real edge in the contest for students, especially with competitors outside academia.

Technology can help higher education link access and excellence by tailoring learning to the diverse student needs and styles. It will allow colleges to respond to critics by containing costs while improving quality. But most of all, it can confound potential competitors by freeing academe's best asset—the faculty—to do what they do best: to perform the higher role that they desire and students demand.

If there is one certainty in the future of technology, it is not just change—but change at ever-accelerating speeds. One problem with the academy is that it always seems to think there is time. But this time, time may run out. Higher education must choose now whether to follow the old byway or the new superhighway. The door of opportunity may not be open for long.

Abstracted from a speech given by Joseph C. Burke, interim chancellor, State University of New York—Central, to the Faculty Conference on Instructional Technologies, "New Faculty Roles in Learning Environments," Albany, NY, June 1-3, 1994. Guest editor—Carol Cross.

Volume 7, number 10
October 1994

Larry Johnson, editor

Leadership Abstracts is published at the office of the League for Innovation in the Community College, 26522 La Alameda, Suite 370, Mission Viejo, California 92691, (714) 367-2884. It is issued monthly and distributed as a benefit of membership in the League-sponsored Alliance for Community College Innovation. Copyright held by the League for Innovation in the Community College